

## Abstract

A light weight fuel tank for a hydrogen powered airplane used as a platform for communication repeaters for communication services. An outer spherical shell member of a sandwich configuration surrounds an inner thin walled spherical shell member in which the liquid hydrogen is contained. A radial gap between the shell members is evacuated to a high vacuum. The facing surfaces of the shell members are coated with a low emissivity material. Electrical heaters are provided to control the evaporation rate of the hydrogen to match the fuel usage and to prevent icing during ascent and descent of the airplane.